



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/823,210	04/13/2004	Donald Prentice Satchell JR.	M00A435-DIV	4637
7590	03/17/2006		EXAMINER	
Ira Lee Zebrak The BOC Group, Inc. Legal Services - Intellectual Property 575 Mountain Ave. Murray Hill, NJ 07974			NECKEL, ALEXA DOROSHENK	
			ART UNIT	PAPER NUMBER
			1764	
DATE MAILED: 03/17/2006				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/823,210	SATCHELL ET AL.	
	Examiner	Art Unit	
	Alexa D. Neckel	1764	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 09 January 2006.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) _____ is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 25-31 is/are rejected.
- 7) Claim(s) _____ is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 13 April 2004 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 25-29 and 31 are rejected under 35 U.S.C. 102(e) as being anticipated by Satchell, Jr. et al. (US 2002/0127167 A1).

The applied reference has a common inventor with the instant application.

Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Even though materials worked upon (such as the composition of a feed) do not limit apparatus claims, MPEP 2115, but the applied reference has the same feed compositions as the instant claims and have been cited in the rejection below.

With respect to claim 25, Satchell discloses an apparatus comprising:

a reactor (100) with a reaction zone (below 110), mixing zone (within riser 18)

and an outlet (7);

a gaseous fluorine feed supply (1), a liquid ammonium acid fluoride feed supply

(6), and a working fluid vapor supply (14) to the mixing zone (18); and

wherein the working fluid supply input (14) is upstream of the mixing zone (18).

Although Satchell does not expressly disclose a "nozzle" for the various feeds, some form of a nozzle would be required/inherent in order to supply the feeds into the reactor as disclosed.

With respect to claims 26 and 27, Satchell further discloses wherein the working fluid supply is vaporized hydrogen fluoride (page 1, paragraph 0007 and page 4, paragraph 0032).

With respect to claim 28, Satchell further discloses a separator (800) in communication with the outlet (7) and comprising a fluid outlet (24) and an outlet (26) for NF₃.

With respect to claim 29, Satchell further discloses wherein the working fluid vapor supply (14) comprises: liquid working fluid supply (5) which flows into a heat exchanger (1000) and then flows out as a gas (14) into the mixing zone (18).

With respect to claim 31, Satchell further discloses wherein the reactor (100) has an internal partition (riser 18) between the mixing zone and reaction zone in the reactor.

3. Claims 25-28 and 31 are rejected under 35 U.S.C. 102(b) as being anticipated by Tarancón (6,010,605).

With respect to claim 25, Tarancon discloses an apparatus comprising:

a reactor (200) with a reaction zone (203), mixing zone (space below 203) and an outlet (280);

a gaseous fluorine feed supply and (208), a liquid ammonium acid fluoride feed supply (206; col. 11, lines 14-19), and a working fluid vapor supply (208) to the mixing zone (space below 203); and

wherein the working fluid supply input (208) is upstream of the mixing zone (space below 203; see figure 1).

Although Tarancon does not expressly disclose a "nozzle" for the various feeds, some form of a nozzle would be required/inherent in order to supply the feeds into the reactor as disclosed.

With respect to claims 26 and 27, materials worked upon (such as the composition of a feed) do not limit apparatus claims, MPEP 2115.

With respect to claim 28, Tarancon further discloses a separator (500) in communication with the outlet (280) and comprising two outlets (504 and 506).

With respect to claim 31, Tarancon further illustrates wherein the reactor (200) has an internal partition (bottom of 203) between the mixing zone (space below 203) and reaction zone (203) in the reactor.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tarancon (6,010,605) as applied to claim 29, above, and further in view of Tarancon (5,628,894).

With respect to claim 30, Tarancon '605 discloses the apparatus as described above, including a heat exchanger (223), but fails to disclose that the heat exchanger can be positioned within the reactor.

Tarancon '894 also discloses an apparatus for producing nitrogen trifluoride and teaches where providing evaporating/heating components within the reactor heat the molten flux to the proper temperature range for an efficient process reaction to take place (col. 2, lines 57-62). It would have been obvious to one of ordinary skill in the art at the time the invention was made to locate the heat exchanger of Tarancon '605 within the reactor as taught by Tarancon '894 in order to heat the molten flux to the proper temperature range for an efficient process reaction to take place.

Response to Arguments

Drawings

The objection to the drawings is withdrawn as applicants have clarified where element 29 is located in the figures.

Specification

The objection to the specification is withdrawn due to applicant's amendment.

35 USC 102 & 103

Applicant has attempted to disqualify the Satchell, Jr. et al. reference by making a statement that the reference and instant application were commonly owned, or subject to an obligation of assignment to, the BOC Group, Inc at the time of the invention.

While this statement can disqualify the reference under a 35 USC 103 rejection (see 35 USC 103(c) and MPEP 706.02(l)(2)), it cannot disqualify the reference under a 35 USC 102 rejection. The rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 1764

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexa D. Neckel whose telephone number is 571-272-1446. The examiner can normally be reached on Monday - Thursday from 9:00 AM - 7:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Alexa D. Neckel
Primary Examiner
Art Unit 1764

March 15, 2006

Alexa Neckel
ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER